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ABSTRACT

The goal of the project described here was to improve the quality of postsecondary education by offering institutions of higher learning information on currently funded educational projects through an interactive database, the Educational Resources Directory (ERD), which contains information on new methods, curricula, and educational technology. Online consultation was to be available through computerized conferencing. The project was implemented on the New Jersey Institute of Technology's computerized conferencing system, the Electronic Information Exchange System (EIES). EIES provides a cost-effective method for integrating a database into a communications and conferencing network. Access was through the TELENET and UNINET services and the Wide-Area Telecommunications Service (WATS). The development process, including the collection of information on postsecondary education projects, is described. The ERD was successfully tested with online users. Attempts to market the ERD, as described, were not successful in that no agreements had been reached at the end of the funded period. Three exhibits illustrate ERD development. Appendixes include technical details, two user manuals, and the minutes of a meeting at which an attempt was made to market the ERD. (SLD)

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ED 371 718

A Resource Center for the Stimulation of Post Secondary Education Innovation via Computer Network

NEW JERSEY INSTITUTE OF TECHNOLOGY
323 Martin Luther King Jr. Blvd.
Newark, N.J. 07102

Grant No.: G008302812

PROJECT DATES:

Starting Date:	September 1, 1983
Ending Date:	September 30, 1987
Number of months:	60

PROJECT DIRECTOR:

Dr. William Savin
Professor
Physics Department

FUND PROGRAM OFFICER(S): Diana Hayman

GRANT AWARD:

Year 1	$165,991
Year 2	99,578
Year 3	126,320
Total	$391,889

IR016633

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A Resource Center for the Stimulation of Post Secondary Education Innovation via Computer Network

The goal of this project was to improve the quality of post secondary education by offering colleges and universities information on currently funded educational projects. This information was provide, via a computer network, by creating:

1. an interactive data base, the Educational Resources Directory (ERD), containing information on new methods, curricula and educational technologies;
2. on-line consultation, via a computerized conferencing.

The project was implemented on the New Jersey Institute of Technology's computerized conferencing system, the Electronic Information Exchange System (EIES).

We expected to market the ERD so we could continue the use of the data base after the end of the grant period. This activity was centered at the College and University Resources Institute (CURI) in Washington, D.C. In our marketing efforts we tried to:

1. interest professional societies in using the data base;
2. convince commercial enterprises to take over the data base;
3. convert the ERD to a PC data base so it could be marketed without the network.

A Resource Center for the Stimulation of Post Secondary Education Innovation via Computer Network

New Jersey Institute of Technology
Newark, New Jersey 07102

William Savin
Physics Department
201-596-3554

The goal of this project was to improve the quality of post secondary education by offering all colleges and universities information on currently funded educational projects. The objectives of this project were to provide, via a computer network, college and university faculty and administrators with:

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2. on-line consultation, via a computerized conferencing.

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Colleges and universities are continually forced to meet challenges and demands. Restricted budgets make conventional approaches to solving these needs difficult. To revise a curriculum, introduce new technologies into programs, or even provide new programs requires expenditures (e.g., money, faculty time, administrative support, etc.) by colleges and universities which must be met, but which may entail withdrawing partial support from existing, necessary and healthy programs. As an alternative to diluting its resources on too many projects, a school will often seek

funds from a federal agency or private foundation. The investment in this approach is enormous in terms of the time and effort spent in proposal preparation and review. However, there is frequently no knowledge of similar efforts in the field. Too often, proposals are submitted that have no chance of being funded since they are little more then minor variations of previously funded projects. A few agencies seek to limit this expenditure by requiring pre-proposals; however, this is only a partial aid, in that it may save a college fruitless hours of proposal preparation, but the school still has a need that must be met.

From another point of view, all private and government funding agencies want the results from their funded projects to make the widest possible impact. Research discoveries are frequently the basis of future work, but discoveries made in designing and implementing innovative educational programs suffer from poor dissemination and do not have the same impact. The system described in this proposal was to help remedy this situation. Users of the system was to find it was to assist in identifying relevant projects and was to allow them to see how these projects have been implemented at other schools. We anticipate that the system was to stimulate new projects, and limit the number of repetitious proposals.

It was felt that a system which was able to provide, using modern Information Age Technology, examples of solutions to problems at a great many post secondary institutions would be invaluable. We knew that FIPSE and other funding agencies, through their grant awards, had addressed the problems of the introduction of new technologies, new teaching and learning methods, and new curricula on many campuses.

It was felt that access to this information, knowledge concerning funded project development, and our proposed use of the electronic media (computer based communications) would limit repetitious proposals, stimulate new and innovative projects, and thus greatly enhance the proposals funded and the impact of successful projects. Quality education in science and technology is particularly difficult because of the rapid change in skills needed to be successful. To be able to find out what innovative projects have been successful in solving particular problems should stimulate better projects and provide assistance to schools across the country to efficiently carry out similar projects.

Our project tried to make readily accessible to post secondary institutions information from many agencies on <u>current</u> projects. This sharing, we thought, would foster more new and innovative projects. We knew that this information network among agencies was informal, but formalizing the process and sharing the information with colleges and universities would help decision making.

The computer conferencing system at NJIT was to be used to create and share the data base of information on new

educational methods, new curricula, and new educational technologies. The users of the data base would also be offered on-line consultation.

To summarize our results, we:

1. designed and implemented the ERD on the EIES system at the New Jersey Institute of Technology;
2. collected data from all major federal agencies that support post secondary educational projects;
3. collected data from a private foundation which supports post secondary educational projects;
4. automated the data collection process when possible;
5. tested the operation of the ERD with on-line users;
6. tried to market the ERD by demonstrating the data base at several professional societies and by meeting with organizations that sold information and could take over operation of the system.

Report

Project Overview

The goal of this project was to improve the quality of post secondary education by offering all colleges and universities information on currently funded educational projects. The objectives of this project were to provide, via a computer network, college and university faculty and administrators with:

1. an interactive data base, the Educational Resources Directory (ERD), through which they could gain information on new methods, curricula and technologies to help plan and implement new programs;
2. on-line consultation, via a computerized conferencing;
3. on-line conferences on topics of the greatest interest.

In addition, we wished to make use of the ever growing number of experts who used the system by having them:

4. evaluated and continually update the ERD.

We expected to be able to market the ERD so we could continue the use of the data base after the end of the grant period. This activity was centered at College and University Resources Institute (CURI) in Washington, D.C. In our marketing efforts we tried to:

1. interest professional societies in using the data base;
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5. tested the operation of the ERD with on-line users;
6. tried to market the ERD by demonstrating the data base at several professional societies and by meeting with organizations that sold information and could take over operation of the system.

Purpose

Colleges and universities are continually forced to meet challenges and demands. Restricted budgets make conventional approaches to solving these needs difficult. To revise a curriculum, introduce new technologies into programs, or even provide new programs requires expenditures (e.g., money, faculty time, administrative support, etc.) by colleges and universities which must be met, but which may entail withdrawing partial support from existing, necessary and healthy programs. As an alternative to diluting its resources on too many projects a school will often seek funds from a federal agency or private foundation. The investment in this approach is enormous in terms of the time and effort spent in proposal preparation and review. However, there is frequently no knowledge of similar efforts in the field. Too often, proposals are submitted that have no chance of being funded since they are little more then minor variations of

previously funded projects. A few agencies seek to limit this expenditure by requiring pre-proposals; however, this is only a partial aid, in that it may save a college fruitless hours of proposal preparation, but the school still has a need that must be met.

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It was felt that a system which was able to provide, using modern Information Age Technology, examples of solutions to problems at a great many post secondary institutions would be invaluable. We knew that FIPSE and other funding agencies, through their grant awards, had addressed the problems of the introduction of new technologies, new teaching and learning methods, and new curricula on many campuses.

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problems should stimulate better projects and provide assistance to schools across the country to efficiently carry out similar projects.

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The computer conferencing system at NJIT was to be used to create and share the data base of information on new educational methods, new curricula, and new educational technologies. The users of the data base would also be offered on-line consultation.

Background and Origins

When this project started we had just concluded a grant where we had offered courses to college/university faculty across the United States using the Electronic Information Exchange System at New Jersey Institute of Technology. We understood how this new electronic media could be used at remote sites and the wealth of information we could deliver using this system. The rationale for the use of our Computer Communications and Conferencing System were as follows:

Systems which supported data bases support no other services. These systems were designed to allow individuals to locate resources via a system of keys (descriptors). These systems were designed to allow for different types of searches, but once the required items are located in the data base, the individual must order copies of documents on file or must go to the locations where those items identified were available. The end product from these data bases was a report or a location where an article or information might be found. No further information was available.

Data base systems, whose contents were educational resource documents, were either computerized or manual systems. The manual systems were, in general, publications of the computerized data bases. Examples of data bases which have educational resources are the Educational Resources Information Center (ERIC), the Smithsonian Scientific Information System (SSIS), and NEXUS (which was a manual system accessed through a telephone hot line). The best example we could find of an educational resources data base was ERIC. ERIC consists of journal articles, research reports, conference papers and bibliographies. The ERIC staff usually acquires unpublished educational literature, abstracts the document, indexes it, enters it into its data base and announces its availability. From discussions with Lynn Barnett, Assistant Director, ERIC Clearinghouse, it became evident that very little, if any information is available in ERIC (or in any comparable data base) on current ongoing funded educational projects.

The data base envisioned in this project, the Educational Resources Directory (ERD), was to consist primarily of information on currently funded post secondary educational projects. The initial input to the system was to be information on what the project proposes to do, during the lifetime of this entry in our data base, the information about the project would continually change. Thus, the data base was to have the ability to dynamically change with the development of the projects. Five years after a project was entered into the ERD, the information was to be transferred to a more conventional data base such as ERIC. For those projects viewed as particularly important and dynamic, the system provided the principal investigators on the project the opportunity to interact with the data base and place comments into the data base. The data base will be described in a future section.

Educational data bases provide very complete Thesauruses of descriptors, and the ERD had the ability to use a substantial subset of these descriptors. In

addition, the ERD data base was searchable as any ordinary data base. Normally, to accomplish this type of operation one would require an enormous investment in software development. However, the computerized communications and conferencing system to be used in this project, the Electronic Information Exchange System (EIES) at the New Jersey Institute of Technology, provided a cost effective method for integrating a data base as we have described here into its communications and conferencing network with a minimal amount of software development.

As users across the country used the ERD and discovered presently active educational projects similar to or complimentary to those that they were interested in developing; they would receive information on the projects (e.g., an abstract for each project, the institution where it is active, the name of the principal investigators, etc.) We also thought that as the project grew, users would also be given the opportunity to communicate via the EIES network with consultants who were working actively in the areas of their interest. Quick, simple, effective communications was to be a major asset to those using this data base. For areas where there was a great deal of interest, computer conferences would be organized, bringing together those seeking information with those who have answers.

Traditional methods for accomplishing the tasks described above would have been costly and usually do not provide the capability for sustained interaction. These costs and limitations constitute a major problem in themselves. Our proposed use of the Electronic Information Exchange System at New Jersey Institute of Technology system overcame most of these shortcoming.

The attributes of the Electronic Information Exchange System at the New Jersey Institute of Technology which made it attractive for use in this project were:

1. it allowed participants in the project, both those seeking information and those acting as consultants, to participate in the project at times of their own choosing;
2. it eliminated geographical constraints on consultants selected for the project since all portions of the country can access this system with equal ease;
3. it provided a written record of all proceedings which can be used to produce written reports should they become desirable in a particular area;
4. cost for using the system would be kept to a minimum by the use of the packaged data transmission networks; TELENET, UNINET or WATS Service.

For completeness we present a brief discussion of the EIES system, its background, its applications, and its operation.

The National Science Foundation, from 1975 to 1977, sponsored development of the Electronic Information Exchange System (EIES) at the New Jersey Institute of Technology (NJIT). The system was to be inexpensive - based upon minicomputer technology which was decreasing rapidly in cost - and it was to be versatile so it could provide a test bed for communications experiments which required a structured automated environment. Development grants for EIES totaled $600,000.

Early in 1977, NSF started sponsoring operational trials of electronic information exchange and seven trial projects were sponsored. After this initial test period EIES has been a self supporting facility which now has over 2000 users.

Examples of groups which have previously used or are currently using EIES are the following:

o Viral Hepatitis group (sponsored by NIH): Ten experts are updating and validating a data base which synthesizes existing knowledge about this disease for use by practitioners.

o Faculty and Administrators from Ten Undergraduate Colleges (sponsored by FIPSE): Over 150 faculty and administrators take in-service training on academic usage of computers.

o Politechs-Legitech group (sponsored by NSF and presently self supporting): Twenty-five state legislative science advisors exchange inquiries and responses about issues of legislative interest, ranging from toxic wastes to the licensing of child care centers.

o Field Trials with the Disadvantaged group (sponsored by NSF): Children in a cerebral palsy school and residents of a home for the aged use computerized communications to expand their intellectual and social world.

o Utopian Communities group (sponsored by Center for Technology and Society): Residents of utopian communities in Arizona and Scotland exchange ideas about building better human settlements.

o The White House Conference on Library and Information Services group (sponsored by the White House): Thirty-seven members of the national advisory committee and staff use EIES to plan a large-scale national conference.

o Joint Electron Device Engineering Council group (sponsored by NSF): Developing industry-wide standards for electronic components and products. This group is made up of executives of the major electronics firms in the United States.

o Hudson Institute group: Developing materials for seminars.

o American Petroleum Institute group (self-sponsored): The Committee on Information Services, consisting of representatives of major oil companies, augments its regular meetings with continuous EIES communications.

o Biomedical Researchers and Severely Handicapped group (sponsored by NSF): Discussing new and innovative ways to provide assistance to the severely disabled through the applications of current technology.

o Mental Workload Researchers group (sponsored by NSF): Developing a new journal to be published and distributed in the near future using the electronic medium.

EIES users have come to the system with a wide variety of computer experience. Some were research scientists with vast experience using time sharing computer systems, but many had never seen a computer or a terminal. The inexperienced users of EIES came from many areas: college faculty from a wide variety of disciplines, university administrators, private businessmen, government employees, medical doctors, librarians, members of legislative staff, handicapped children and senior citizens. These inexperienced users managed to become proficient with EIES in about one week and all they had to work with was an instruction manual and on-line assistance. Our present FIPSE project is a good example of EIES users with a wide variety of backgrounds who have gained system proficiency in a relatively short period.

This project had both of these aids (instruction manual and on-line assistance) available to participating faculty. A copy of the instruction manual is included in the appendices. In addition, the initial contact with the system was through a very simple, specially designed interface to allow new users to gradually gain system experience. A telephone "hot line" was also maintained, supplementing our on-line assistance, to solve problems for those experiencing difficulties with

our methods of instruction. We kept a record of system users by institution and new users of others on their campuses who are EIES users.

Remembering that EIES is not a traditional computer system, but rather a communications system where great pains have been taken to design interfaces for inexperienced users, it is understandable why users of the system find it easy to learn.

EIES has provided service to users all over the continental United States, Hawaii, Alaska, Canada and Europe. Except for local users of EIES, access was normally provided by the package data transmission networks, TELENET and UNINET. One or both of these transmission networks have access points in most cities in the continental U.S. having a population of over 50,000. UNINET services many smaller cities as well. For this project some participants may use TELENET or UNINET to access EIES while others will use a Zone 5 incoming WATS service to connect to the NJIT facility. These methods of access have been chosen to minimize costs in the project.

The system is accessed through a standard computer terminal. EIES also has its own programming language, INTERACT, which will be used to develop the special communication and interface software needed for this project. Extensive use has been made of INTERACT to create special purpose communications environments and the resulting systems have worked well. On of these systems is the interface presently used on our present FIPSE project.

INTERACT makes use of many of the standard EIES features which are discussed at the end of this section.

The Educational Resources Directory (ERD) will be incorporated into EIES using a special software system called RESOURCES. The RESOURCES network data base system is a specially tailored data base and communications system. With RESOURCES, data bases may be created as part of EIES and items may be entered

and retrieved as in conventional data bases. However, RESOURCES goes beyond this basic "data base" function by nesting and integrating data entry, data retrieval, and the data bases themselves within the larger communications context of EIES.

First, RESOURCES data bases can be configured to allow retrieval of items by any data base user regardless of geographic location. Second, users can be given appropriate levels of access to allow them to enter and modify resources

in the data base directly, thereby decentralizing and diffusing the typical "central clearinghouse" bottleneck plaguing modern data base systems. Pre-defined searches on recently-added items can be done automatically while users are not on-line. Third, any data base user retrieving a resource is allowed by the system to enter an evaluative comment and to rate the resource item on a numeric scale specified by the data base monitor. Subsequently, data base users and monitors alike can access this evaluative feedback. Finally, RESOURCES is equipped with features to facilitate off-line entry and editing of resources in a microcomputer for subsequent transmission to the intended data base or data bases on EIES.

RESOURCES data bases contain items and each item contains several discrete parts (these are sometimes called "records" and "fields" in other systems). Items can be entered with a variety of associated kinds of parts including free text, descriptors, numbers, dates and labels. As with all data bases, a Thesaurus of descriptors, dates, labels, etc. is available.

RESOURCES data bases also includes a variety of special evaluation and report-writing features that aid data base monitors in tracking, managing and maintaining efficient utilization of even the most active data bases.

The standard features of EIES which will be used by our clients as they develop their ideas via our network are:

1. The Message: A communication from the author to one individual, many specified individuals or a defined group. The time and date of receipt of the Message by each recipient is confined to the sender. A tree structure for related messages can be created.

2. The Conference: The Conference is a topic-oriented discussion for a defined group in which a permanent transcript is built up of the proceedings. A conference can last from a week to months, with participants entering and leaving the discussion at their convenience and taking as long as they need to reflect on previous entries or consult references or data before responding. A conference entry can be given an association number, noting the earlier items to which it is related. A participant can be helped to review and organize the proceedings by asking to see all the entries that are associated with a specific one. One can also review them by asking to see, for instance, any that contain a certain word or phrase, such as "side effect" or "validity."

3. The Notebook: A participant's private on-line space for composing, storing and recognizing items on which he or she is working, with the aid of extensive computer-assisted editing routines. One can open designated pages of one's Notebook to others for reading; thus, for instance, after completing a draft of a paper, a faculty member could send a group message inviting anyone interested to read it and comment. One can also open parts of the notebook to others to write in, thus facilitating remote co-authoring.

4. The Bulletin: A public space, like an on-line newsletter.

The following table summarizes conventional means of communications the above EIES features replace.

Structures and Features	Replaces
MESSAGES	Letters Telephone Face-to-face visits
CONFERENCES	Face-to-face conferences or visits
NOTEBOOKS	Sending of drafts or preprints Necessity for co-authors to be co-located
BULLETINS	Newsletters

Project Description

Because of limited FIPSE funds and the desire by FIPSE to first test the feasibility of this project, the scope and budget for the first year of operation was reduced. The first year award was considered a planning grant but our understanding was that the overall scope of the project was to remain the same. This change caused problems in the three year project as will be discussed in the next section on Project Results.

The project narration will consist of the timetables with some brief explanations. Note that the first years activities were very limited in scope.

The following is the Timetable of grant activities for the first year (September 1, 1983 to August 31, 1984).

September 1983 - December 1983

- Training session on EIES usage for staff member of FIPSE;
- Organization of an EIES computer conference to design the Education Resources Directory;
- Identification of potential contributors to ERD
- First organizational meetings of contributors to the ERD (e.g., government agencies and private foundations);
- Preliminary design of the ERD data base;
- Development of marketing plan for ERD.

December 1983 - May 1984

- Submission of continuation grant application to FIPSE;
- Second round of meetings to organize the contributors to the ERD;
- Design of the ERD data base;
- Design of software to implement ERD data base;
- Evaluation of ERD software design and modification of software design if needed;
- EIES computer conference to fix list of educational innovators to participate in program;
- Review and modification of ERD marketing plan.

May 1984 - August 1984

- Recruitment of faculty from across the country for program start;
- Data base entries collected ;
- Training manual for system prepared;
- Topics selected for which the ERD will provide on-line consultants;
- On-line consultants identified for the ERD data base.

With the modification in the original workplan, project activities commenced in September, 1983. The computer conference to design the ERD was

started. This conference and the EIES message system were also been used extensively for project planning and management.

The first organizational meeting was held on November 18, 1983 at the National Science Foundation. Those attending were Alphonse Buccino (NSF, Science Education), Lynn Barnett (ERIC), John Wooster (NEH), Diana Hayman (FIPSE), Julia Jacobsen (AACUO), and William Savin (NJIT).

Ms. Hayman opened the meeting with a discussion of the project and FIPSE's interest in the project. Since all of those present were participating in the development phase of the project, details of how the ERD design would progress were discussed. It was agreed that NSF would be put on EIES.

The marketing plan was next discussed. It was agreed that plans for making the project self supporting at the close of the project hinged on having the data base contain up to date grant information. Those present agreed to cooperate in making their grants data available and NSF also suggested that their final reports be added to the ERD.

We next discussed those federal agencies which make post secondary educational grants and could be added to the project.

Following this meeting a second meeting was held at NEH with Arman Tashdinian, John Wooster, Frank Shaw, Blanche Premo, and Peter Patrikis. The agenda for this group was the same as for the previous meeting and Dr. Premo agreed to serve as our liaison at NEH.

Both NSF and NEH gave examples of their grants data and it appears the data will fit easily into the ERD and will also help in the ERD data base design.

Following the meeting with the government agencies, Diana Hayman arranged for us to talk with Richard Johnson of the Exxon Education Foundation. Dr. Johnson was asked if he would help organize a meeting of private foundations that give awards to post secondary institutions to stimulate change. The purpose of

the meeting would be to seek their participation in this project. Johnson agreed to join us in this effort, and to facilitate planning for the meeting, he was added to an EIES computer conference. At the suggestion of Dr. Johnson it was agreed that the foundation meeting be held at the Council on Foundations in Washington, D.C. This location would facilitate foundations attending the meeting, give the meeting a national character, and avoid any indication that any one foundation was sponsoring the project. The date agreed upon for the meeting was January 11, and Johnson sent the invitations. The minutes of the January 11 meeting were prepared jointly by Drs. Savin and Johnson and distributed to all interested foundations. They are important because they show the interest and reactions of the foundations represented, and therefore are presented in the Appendices.

The following Timetable details our second year's activities (September 1, 1984 thru August 31, 1988).

September 1984 - November 1984

- Software development to implement ERD data base;
- Evaluation of ERD software and modification of software if needed;
- EIES computer conference to fix final list of educational innovators participating in the program;
- Recruiting of consultants and conference moderators for program;
- Data base entries start;
- Training Manual for system distributed.

During this first three month period the software implementation for the ERD data base, using the EIES RESOURCES system, took place. As the software was developed it was tested. Data base entries started and these entries were used to test the system. We also reviewed the Thesaurus of descriptors for the ERD.

December 1984 - February 1985

- Initial list of participating faculty administrators finalized and notification sent informing them when they will be put on-line;
- Training sessions held to show how to use system;
- Manual on system operation distributed;
- First group of faculty put on-line;
- Data base usage starts;
- Consultants introduced to faculty on-line;
- Consultants open conferences to faculty starting campus activities.

The first group of faculty and administrators to use the system were put on-line and the College and University Resource Institute continued collecting and entering data into the ERD. The Training Manual was finalized and distributed to initial users. A copy of the Training Manual is included in the Appendices. This manual gave complete instructions on how to use the system and the manual was tested extensively before it was sent to the users.

March 1985 - May 1985

- On-line evaluation starts and continues throughout the project period;
- Data base usage continues;
- New consultants are added to community as needs are identified;
- New recruits are identified to be added to present community of users.

June 1985 - August 1985

- New faculty and administrators added to system;
- Training session held for new users;
- Data base usage continues
- New consultants are added to community as needs are identified;
- Plans are implemented to make the system self supporting. These plans are detailed in the Marketing Plan that is given after the Timetables.

The following timetable of events describes the activities for the last year of the project (September 1, 1985 thru August 31, 1986).

September, 1985 - December, 1985

- Replace approximately 1/3 of the original trial data base users;
- Allow users being replaced on the ERD to continue as paying members;
- Continue ERD testing;
- Start new on-line consulting-conferencing activities;
- Continue project evaluation;
- Market the ERD to private users through mailings, etc. and presentations at professional society meeting;
- Market ERD sustaining memberships to corporate and private foundations and government agencies;
- Provide special services for ERD sustaining members.

January, 1986 - April, 1986

- Replace the second third of the original trial data base trial users;
- Allow users being replaced on the ERD to continue as paying members;
- Continue ERD testing;
- Project evaluation;
- Market the ERD to private users through mailings, etc. and presentations at professional society meeting;
- Market ERD sustaining memberships to corporate and private foundations and government agencies;

May, 1986 - August, 1986

- Notify trial users added to the ERD this year that the trial memberships will end September 1, 1986;
- Complete project evaluation;

- Market the ERD to private users through mailings, etc. and presentations at professional society meeting;
- Market ERD sustaining memberships to corporate and private foundations and government agencies;
- Provide the final report.

The project did not end September 1, 1986 but was extended 9 months to help with marketing the ERD. This was a no-cost extension. Because the project started a year late and we had only two years to create, test and market the data base we found a the end of the third year that the marketing efforts were behind schedule and the ERD was not self supporting. During the extension we had two tasks;

- Continue updating the data base;
- Market the ERD so we could continue operations.

The College and University Resource Institute, a non-profit corporation, carried out the marketing of the ERD. Marketing activities commenced once the ERD was operational and continued well past the close of the grant period. The marketing activities are now described.

Marketing Activities

Discussions with different user groups indicated that this plan presented below was practical.

The Marketing Plan was based on the following assumptions. By the end of 1984:

1. software adjustments to the data base would be completed;
2. the trial period users would have tested and commented on the data base content;
3. the cost estimates for maintaining the data base would be understood so sales could begin.

Four types of users were to be established:

1. Contributors: Government agencies who agreed to provide their current grant abstracts and other information to the system. Their contribution was providing data in useful form and to act as advisers. They were to be charged a nominal fee for use of the system but such usage would be limited. If agencies had a need to use the system more extensively, they would be charged. It was also hoped that as agencies observed there data in an integrated data base they would offer the ERD managing organization contracts to do studies.

2. Contributing Supporters: Organizations which agree to contribute information, advise on the design of the data base, recommend consultants, and provide contributions to the support of the basic system. These organizations would consist of private foundations or corporate foundations which would be expected to pay for the use of the system. Their payments were to underwrite the system's maintenance and keep the Subscribers costs' low.

3. Subscribers: Institutions and individuals would subscribe by paying a modest annual fee to cover connect and computer time. This initial subscription was to provide a minimum level of system usage. Once the initial time was used the Subscribers would be billed.

4. Consultants: These persons would be paid a nominal fee for their participation. In addition, they would be allowed to use the ERD at no cost, but there would be a fixed time limit.

During the period when the marketing effort was carried out (1985-87), it was envisioned that FIPSE and CURI would provide support. CURI continued to provide space and contribute necessary supplies and support services to insure stability while they tried to building a sound financial base for the system.

The marketing process first concentrate on securing Contributing Supporters. For the last 18 month of the grant period we approach private

foundations, corporate foundations, and government agencies trying to convince them that the data base we demonstrated to them was deserving of there support. We spoke at the Council on Foundations meeting and found interest in the ERD among several foundations. In addition, the multifaceted effort outlined below was used to secure subscribers.

1. Test users were offered discount subscriptions.

2. National organizations were approached and offered demonstrations, panel discussions and user training sessions. These organizations included the Society of Research Administrators (SRA), AACUO, AAAS, The Modern Language Association, The Association of Academic Deans, American Association for Higher Education, National Council of University Research Administrators, American Physical Society, American Chemical Society, American Geophysical Union, and the American Biological Association.

3. Campus meetings were held by AACUO to demonstrations of the system. The principals of AACUO visited over 20 campuses.

4. Articles were placed in education-related newsletters announcing the ERD.

6. Direct mailing were to presidents, deans and other academicians.

7. A professional public relations person was retained to detail plans for general marketing and design a brochure.

Project Results

The results of this project fall into two categories. First we will look at the development of the data base and related computer activities, and second we discuss the marketing efforts which were to make the Educational Resources Directory self supporting.

1. Implementation of the Educational Resources Directory (EDR) Database Software.

The data base software for the ERD has been designed, tested and implemented. Modifications to the original data base design was required because of the varied methods by which private foundations and government agencies link principal investigators to grants. The data base redesign was required to allow more than one principal investigator to be linked to each grant. No single data base structure could be employed which contained both grant and principal investigator information. Therefore, the structure used was two linked data bases. The first of these data bases contains the grant information. This data consists of a grant number (which we provide for each grant), a title, principal investigator numbers linking this data base to our second data base, the funding agency, agency numbers, starting date, ending date, etc. A printout of the Grant Information Data Base structure and examples of the data are contained in Exhibit 1. It should be noted that two of the important features in the Grant Information data base are an abstract (which is included when the agency has one on record) and a field in which related projects, if they exist, can be linked to the project under examination. As previously mentioned, the Grants Information Data Base is linked to the second data base containing principal investigator information. As many principal investigators as needed may be linked to each grant and even if principal investigators change during the course of a project, new principal investigators can be added to the project and the former principal investigators retained. The format for the Principal Investigators Data Base and examples of data are shown in the Exhibit 2.

Search procedures on the linked data bases allow all quantities shown as indexed (see Exhibits) to be searched. These searches can be done in any combination desired. For example, a search may be done, on the Keywords in the

Grants data base, the Starting and Ending Dates in the Grants data base, and the State in the Principal Investigators linked data base. Any combination of 'and' 'or' conditions can be placed on the search, and the results will produce both the data on the grant and principal investigators sought. Because the search procedures are time consuming they require long amounts of connect time if the person doing the search had to stay on-line and wait for the results. For this reason, all searching were be done as background tasks and since the data base is being maintained on a communications system, the information requested was delivered to the data base user in the form of an EIES Message. The Message will contain the information sought and a record of the search will be kept to facilitate nested or modified searches.

The software needed for this project is completed and tested. In addition to the above software we have also developed software which allows the data base to be written to tape and to be down-loaded to dBase III files. This last part of the software was developed during the grant extension in an effort to assist in marketing the data base. Making the data bases transportable we felt would help in marketing activities.

Data Collection.

The agencies which have supplied data for the ERD are the Fund for the Improvement of Post-Secondary Education, the National Endowment for the Humanities (NEH), the National Science Foundation (NSF), and the Department of Education (DoE) programs with post secondary educational projects. Three of the agencies (NSF, DoE, and NEH) have provided 1600 bpi computer tapes with their post secondary educational grants. The tapes produce required a great deal of work on our part to input them into the data base and on the agencies part to produce tapes with the correct formats. With these agencies as our examples, we had hoped that we could induce all agencies that they should provide data in

machine readable form. Indications are that all other agencies would like to do this but the FIPSE people have no computer based system with there information.

The only private foundation from which we have data on their post-secondary grants is the Exxon Educational Foundation. However, all of the information was provided on paper and therefore was keyed into the system. Every foundation we approached would only provide information in hard copy format and most would only allow us to copy records they kept by hand. This was extremely labor intensive and we found it necessary to develop a system for inputting this information into the data base. Our original plan was to have data entered directly into the Electronic Information Exchange System ERD data bases. The amount of information that has to be typed in would require us to stay on-line for 400 to 800 contact hours and would have cost us in computer and connect time over $10,000. The solution to this problem was to use a micro-computer from NJIT's Center for Information Age Technology. A dBase III CRT image of the data bases was created and data entry was done off-line. CURIE, the Washington D.C. organization doing the data base entry for us, uses the dBase III system provided to enter the ERD data and then mails the diskette to Newark. The data base information was then down loaded to the ERD using another micro-computer which we interface to EIES. This piece of software development, which took several weeks to design and implement, has saved over $4,000 in data base entry costs, and with the amount of data base information being presently keyed, it is expected to save two to three times this amount this year.

With the development of the data bases, a Thesaurus of Keywords was created to be used with succeeding data base entries. The Thesaurus is shown in Exhibit 3. At each Advisory Board meeting we reviewed the Thesaurus. This discussion was continued in our computer conference on data base design.

The ERD had over 2,000 entries at the close of the grant period. This data had been validated and over 40 users of the ERD had the opportunity to interact with the on-line data base. In addition, the dBase III version of the ERD was made available to CURI for those who wanted a PC version of the data base.

On-line Consulting and Faculty-Administrator Trials.

At the January 7, 1988 Advisory Board meeting, preliminary discussions were held to identify the areas where on-line conferencing (consulting) should be developed. Those areas which were be developed as conferences were:

- o Applications of Technology to Post-Secondary Education,
- o New Roles and Developments in Humanities Education

2. Marketing of the ERD.

Presentations on the ERD data base were made at National Council of University Research Administrators, the Association for Affiliated College and University Offices, and the Society of Research Administrators. We received over 40 requests to use the system from these presentations and all requests were honored. It was made clear that these trial memberships were limited and extended use of the system would require users to pay for use of the system.

During the last year of the grant period meetings were held with Taft Information Services, Chronicle Data Services, the Association of State Colleges and Universities, Education Resources Information Clearinghouse, Foundation Center, Illinois Research Information Service, and The Council on Foundations. With each organization we offered to let them market the data base as part of their service. Each organization was told they could take over the ERD or we would maintain it and let them just market services based on the ERD data.

Several organizations showed interest in the data base but no agreements were reached at the close of the grant period.

Evaluation of Educational Grants Network

The goal of the EGN was to create a data base of Educational Projects Funded by government and other agencies for use by educators interested in curriculum development and funding mechanisms. The data base was intended to provide the means for a literature search of the subject and include information to enable the faculty and administrators in remote locations to discuss common goals and methods. The concept initially was accomplished the goal through on-line communication.

The plan and system was evaluated by a team of persons connected with CURI; an advisory board representing the participating agencies and ERIC; three successive groups of users in colleges and universities. The assignment covered three stages of development.

1. The basic material to be included and the data base content and format.
2. The system itself in the context of usability and being user friendly.
3. The use of the material on-line and in alternate forms.

The advisory group consists of representatives of NEH, NSF, ERIC, DoE and CURI met and considered the content and agreed it should be limited to educational projects and not include basic research. They determined that the material should be retained in the system from 3 to 5 years and be passed on to ERIC.

The format of the data base was reviewed and modifications made to make it as close as possible (with additional Data) to the regional directories of foundations, noting that the format used had been studied and tested by many publishers and the Foundation Center.

The system was continuously assessed until satisfactory format, content and search capabilities were achieved. A team comprised of Flora Harper, President of the Association for Affiliated College and University Offices and Dr. Bernard

Parker, Vice President for Academic Affairs, St. Leo College and an ACE Fellow, Kay Courtade, Research Associate (AACU developed the keyword index for the search system.

Over a period of a year EIES access codes were given out for a four month period to test users. These users were recruited at national meetings and from AACUO membership.

The user group assessments were disappointing. They did not make direct use of the data base on-line and in most cases turned the job over to a grants officer. The response time overnight was too slow and a quick search capability was designed for basic information. Detailed searches followed.

The evaluation team from CURI determined that the project lacked adequate funds for promotion and recommended a further revision of the system to make it operate on a PC with a hard disk and provide on-line hard copy and floppy disk search results. This work has been completed and tested.

Finally, an overlapping FIPSE project at the Association of State Colleges and Universities is starting up and the EGN directors are working to see if there can be mutual activity and benefit between the projects.

Conclusions

As stated at the very top of this report, the goal of this project was to improve the quality of post secondary education by offering all colleges and universities information on currently funded educational projects. We tried to create a data base which provided timely information on post secondary education so we could stimulate better research and development, and also help successful projects get their ideas into as many institutions as possible.

We did not accomplish our goal but we did meet most of our objectives. We managed to create a sophisticated data base of timely information at minimal costs. The technology used required the information to be supplied to the users from the

ERD to take one day. This we found to be a problem to the users but we could not remedy this problem with the money available. Even with this failing, it was clear that we could create and implement a data base on a computer system which could be accessed from any place in the United States and do this at minimal costs.

The major place we failed in this project was in marketing the product we created. Because of money constraints in the first year of the project we had to reduce our efforts. This made our three year project a two year project. We had less than one year to market the EGn and this was not enough time. Even now we are trying to work with any organization that can make use of the data we collected. Less than two months ago we were approached by Association of State Colleges and Universities and we offered to supply our data in machine readable form for their data base.

To make a project such as this one successful, one must provide the user community of the data base with a compelling to use the data. This was not done in this project.

EXHIBIT 1

THE ERD GRANT INFOMATION DATABASE

Choose a verb from the first column and a noun from the second column and make a command by combining the first letter of each. For example, use AC to add a comment.

Verbs	Nouns
A (Add)	A (Activity trace)
D (Display)	C (Comment)
E (Enter)	D (Database)
	E (Evaluation)
F (Find)	F (Format)
G (Get)	K (Keyword)
M (Modify)	L (Layout)
P (Print waiting)	M (Marker)
R (Remove)	O (Option)
S (Sort)	P (Pattern)
T (Tabulate)	R (Resource)
U (Update)	T (Template)
X (Xmit)	U (User)

Enter ++ to return to EIES.
Enter ? to get a list of operational commands.

FORMAT FOR ERD GRANT INFORMATION DATABASE

PART NAME	INDEXED	TYPE	CHARACTERISTICS
GRANT NUMBER	Y	NUMBER	MIN=0, MAX=999999
TITLE	Y	LABEL	
PI NUMBERS	Y	KEYWORDS	256 KEYWORDS
FUNDING AGENCY	Y	LABEL	
AGENCY NUMBER	Y	LABEL	20 CHARS.
STARTING DATE	Y	DATE	
ENDING DATE	Y	DATE	
DURATION	Y	LABEL	15 CHARS.
YEAR 1 FUNDING	Y	NUMBER	MIN=0, MAX=99999999
YEAR 2 FUNDING	Y	NUMBER	MIN=0, MAX=99999999
YEAR 3 FUNDING	Y	NUMBER	MIN=0, MAX=99999999
TOTAL FUNDING	Y	NUMBER	MIN=0, MAX=99999999
KEYWORDS	Y	KEYWORDS	256 KEYWORDS
ABSTRACT	N	TEXT	15 LINES
RELATED PROJECTS	Y	KEYWORDS	256 KEYWORDS

Number of display parts: 1

Primary id: GRANT NUMBER

GRANT NUMBER: 9
TITLE: Bradford Plan for a Practical Liberal Arts Education
PI NUMBERS: 11
FUNDING AGENCY: FIPSE
AGENCY NUMBER: 01
STARTING DATE: 9/ 1/83
ENDING DATE: 8/31/86
DURATION: 25 mos
YEAR 1 FUNDING: 26000
YEAR 2 FUNDING: 0
YEAR 3 FUNDING: 0
TOTAL FUNDING: 26000
KEYWORDS: CORE CURRICULUM; PRACTICAL SKILLS; LIBERAL ARTS; INTERNSHIP; IMPLEMENTATION

ABSTRACT:

Implements its curriculum plan for a Practical Liberal Arts Education. Support is provided for faculty to develop a core general education program, liberal arts minors in practical skill/knowledge areas, and student and faculty internships directed at applying theory in work situations.
RELATED PROJECTS: NONE

GRANT NUMBER: 12
TITLE: Developing Models for the Evaluation of Remedial Programs
PI NUMBERS: 14
FUNDING AGENCY: FIPSE
AGENCY NUMBER: 01
STARTING DATE: 9/ 1/83
ENDING DATE: 12/30/85
DURATION: 28 mos
YEAR 1 FUNDING: 38760
YEAR 2 FUNDING: 0
YEAR 3 FUNDING: 0
TOTAL FUNDING: 38760
KEYWORDS: REMEDIAL EDUCATION; EVALUATION MODELS; POSTSECONDARY

ABSTRACT:

Improves remedial education in California public higher education by developing program evaluation models for each segment, using those criteria to identify exemplary remedial programs and disseminating the evaluation models and the descriptions of exemplary programs.
RELATED PROJECTS: NONE

GRANT NUMBER: 16
TITLE: Curricular Innovation in the Development of a Graduate Research Institute in the Humanities and Social Sciences: A Pilot Project
PI NUMBERS: 18
FUNDING AGENCY: FIPSE
AGENCY NUMBER: 01
STARTING DATE: 10/ 1/83
ENDING DATE: 9/30/85
DURATION: 24 mos
YEAR 1 FUNDING: 47761
YEAR 2 FUNDING: 0
YEAR 3 FUNDING: 0
TOTAL FUNDING: 47761
KEYWORDS: FACULTY-STUDENT GROUPS; GRADUATE RESEARCH; HUMANITIES; SOCIAL SCIENCES

ABSTRACT:

Supports curricular innovation in the context of a more supportive and stimulating institutional framework for advanced graduate education in the humanities and social sciences. A pilot project would create workshops in two departments to provide regular faculty-student meetings as a basis for launching dissertation study and as a forum on substantive issues.
RELATED PROJECTS: NONE

EXHIBIT 2

ERD PI INFORMATION DATABASE

FORMAT FOR ERD PI INFO DATABASE:

PART NAME	INDEXED	TYPE	CHARACTERISTICS
PI NUMBER	Y	NUMBER	MIN=0, MAX=999999
LAST NAME	Y	LABEL	
MIDDLE INITIAL	Y	LABEL	1 CHARS.
FIRST NAME	Y	LABEL	20 CHARS.
INSTITUTION	Y	LABEL	80 CHARS.
DEPARTMENT	Y	LABEL	50 CHARS.
INSTITUTE TYPE	Y	LABEL	5 CHARS.
MAILING ADDRESS	N	TEXT	7 LINES
CITY	Y	LABEL	25 CHARS.
STATE	Y	LABEL	2 CHARS.
ZIP CODE	Y	LABEL	9 CHARS.
TELEPHONE (AAA NNN-XXXX)	Y	LABEL	12 CHARS.
TITLE OR RANK	Y	LABEL	30 CHARS.
ASSOCIATED GRANT NUMBERS	Y	KEYWORDS	256 KEYWORDS

Number of display parts: 5

Primary id: ASSOCIATED GRANT NUMBERS

PI NUMBER: 18
LAST NAME: Baker
MIDDLE INITIAL: M
FIRST NAME: Keith
INSTITUTION: University of Chicago
DEPARTMENT: Department of History
INSTITUTE TYPE: PHPR
MAILING ADDRESS:
1126 East 59th Street
CITY: Chicago
STATE: IL
ZIP CODE: 60637
TELEPHONE (AAA NNN-XXXX): 312 962-8387
TITLE OR RANK: Professor
ASSOCIATED GRANT NUMBERS: 16

PI NUMBER: 20
LAST NAME: Knop
FIRST NAME: Sheila
INSTITUTION: Colorado Commission on Higher Education
INSTITUTE TYPE: STA
MAILING ADDRESS:
Colorado Heritage Center
1300 Broadway, Second Floor
CITY: Denver
STATE: CO
ZIP CODE: 80203
TELEPHONE (AAA NNN-XXXX): 303 866-2726
ASSOCIATED GRANT NUMBERS: 18

PI NUMBER: 12
LAST NAME: Balestri
FIRST NAME: Diane
INSTITUTION: Bryn Mawr College
INSTITUTE TYPE: PHPR
CITY: Bryn Mawr
STATE: PA
ZIP CODE: 19010
TELEPHONE (AAA NNN-XXXX): 215 645-5370
TITLE OR RANK: Associate Dean
ASSOCIATED GRANT NUMBERS: 14

EHHIBIT 3

KEYWORDS THESAURUS
ERD GRANT INFOMATION DATABASE: 1/10/85

ADMINISTRATION; ADULT EDUCATION; ADULT LITERACY; AGING;
ANALYTICAL SKILLS; APPLIED MATHEMATICS; ARTICULATION-TRANSFER;

BUSINESS SOFTWARE;

CABLE; COLLEGE & UNIVERSITIES; COLLEGE & UNIVERSITY; COLLEGE &
UNIVERSITY ADMINISTRATION; COLLEGE FACULTY; COLLEGE LEVEL;
COLLEGE PREPARATION; COLLEGE-UNIVERSITY ADMINISTRATION;
COMMUNICATIONS; COMMUNICATIONS SKILLS; COMMUNITY COLLEGE;
COMMUNITY COLLEGES; COMMUNITY SERVICE; COMPETENCY; COMPOSITION;
COMPUTER CURRICULUM; COMPUTER PROGRAMMING; COMPUTER SCIENCE;
COMPUTER SIMULATIONS; COMPUTER USES; CONSULTATION; CONTINUING
EDUCATION; CORE CURRICULUM; COUNSELING; COURSE DELIVERY; CRITICAL
THINKING SKILLS; CURRICULUM DEVELOPMENT;

DATA ANALYSIS TRAINING; DATA BASE DEVELOPMENT; DISADVANTAGED
STUDENTS; DISSEMINATION;

ECONOMICS; ELECTRICAL DESIGN; ELECTRONIC CONFERENCING;
ELEMENTARY; EMPLOYED WORKERS; ENGLISH; ENGLISH AS A SECOND
LANGUAGE (ESL); ENVIRONMENTAL STUDIES; EVALUATION CENTER;
EVALUATION MODELS; EXPERIENTIAL LEARNING;

FACULTY DEVELOPMENT; FACULTY TRAINING; FACULTY-STUDENT GROUPS;
FOREIGN LANGUAGE TRAINING; FOREIGN LANGUAGES; FRENCH;

GERONTOLOGY; GLOBAL ISSUES; GRADUATE DEGREE PROGRAM; GRADUATE
EDUCATION; GRADUATE RESEARCH; GRADUATE STUDENTS;

HIGH SCHOOL PRINCIPALS; HIGH SCHOOL/COLLEGE COLLABORATION;
HIGHER EDUCATION FINANCING; HISPANICS; HISTORY; HUMANITIES;

IMPLEMENTATION; INDUSTRY COOPERATION; INFORMATION ANALYSIS;
INFORMATION MANAGEMENT; INSERVICE WORKSHOPS; INTERACT TECHNOLOGY;
INTERNATIONAL CAREER TRAINING; INTERNATIONAL EDUCATION;
INTERNSHIP;

JOB SKILLS; JOB TRAINING; JUNIOR TRANSFER PROGRAM;

LANGUAGE TRAINING; LANGUAGE-BASED CURRICULUM; LEADERSHIP
TRAINING; LEARNING DISABILITIES; LIBERAL ARTS; LIFE SCIENCES;

MACROECONOMICS; MANUFACTURING; MATERIALS DEVELOPMENT; MATH
EDUCATION; MATH PROFICIENCY; MATH-SCIENCE EDUCATION; MENTORS;
MICROCOMPUTER USES; MICROCOMPUTERS; MINORITIES; MINORITY ACCESS;
MODEL PROGRAM; MODEL REGIONAL CENTER; MULTICULTURAL NEEDS;

NATURAL SCIENCES; NETWORKING; NON-TRADITIONAL WORKERS; NONE;
NURSING;

OPTICS; OUTCOMES;

PAIRED COURSES; PATHOLOGY; PHYSICIANS; PILOT PROGRAM; POSTSECONDARY; PRACTICAL SKILLS; PRESERVICE TEACHER TRAINING; PROBLEM-SOLVING; PROFESSIONAL DEVELOPMENT; PROFICIENCY TESTING; PROGRAM DEVELOPMENT; PROGRAM EVALUATION;

READING; REMEDIAL EDUCATION; RETIRED SCIENTISTS; RURAL POPULATION; RURAL POPULATIONS;

SCIENCE; SCIENCE EDUCATION; SCIENCE-MATH EDUCATION; SECONDARY; SEMINARS; SEX EQUITY; SMALL BUSINESS DEVELOPMENT CENTER; SMALL COLLEGES; SOCIAL SCIENCES; SOFTWARE; STATE LEGISLATORS; STATISTICAL RESEARCH; STRATEGIC PLANNING; STUDENT DEVELOPMENT; STUDENT POPULATION; SUMMER INSTITUTES;

TEACHER ASSISTANT TRAINING; TEACHER TRAINING; TECHNICAL WRITING; TELECOURSES;

UNDERGRADUATE RESEARCH TRAINING;

WOMEN; WOMEN'S STUDIES; WORKING WOMEN; WORKSHOPS; WORKSTUDY; WRITING

Appendix 1

1. What forms of assistance from FIPSE were helpful? How can the Fund more effectively work with projects?

Diana Hayman, the Program Officer for this project, made it possible for me to do this project. She provided the contacts needed to collect the data for the ERD and she helped us put the data base into usable form. During the three year project Diana provided continuous help debugging the data base software and putting the system into the best possible condition.

The greatest problem we had was convincing users that the data in the ERD was valuable to them. Now that we look back at the project, it is clear that we would have been in much better shape if we could have had FIPSE relate all new projects to data (grants) in the ERD. We could have had each new project report as part of their proposal application which FIPSE, NSF, NEH, etc. active grants relate to the work they wish to do on this new grant. Even if the work proposed was similar to work being done, it would have helped to create a network between similar projects. This would have been invaluable.

2. What should the Fund consider in reviewing future proposals in this area? What are emerging new directions?

The area being discussed here is the funding of new data bases. We saw from our data base that FIPSE was funding several new data bases.

It is clear that this type of project is being proposed to FIPSE on a regular basis, and many of these projects have merit and are funded. The only thing that makes data base projects valuable is that the information in the systems is wanted and used by people other than those who create the data base. The best way to test this is to require that FIPSE applicants (and applicants to other agencies) relate their projects to the information in these data bases. If this were done the applicants would build a network of people doing their type of work and it might raise the level of all projects funded.

Appendix 2

Electronic Information Exchange System (EIES)

Education Resources Directory (ERD)

William Savin

New Jersey Institute of Technology

Can you help us with this manual?

If you have any comments on how we can improve either section of the manual, please send them to:

William Savin
Physics Department
New Jersey Institute of Technology
Newark, N.J. 07102

Thank you for your assistance.

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Electronic Information Exchange System (EIES)

CCCC @ NJIT 1-201-596-EIES
CURI 1-202-659-2104

Quick Reference Manual

Don't panic! EIES is very forgiving, and you cannot hurt the computer by typing the wrong command.

HOW TO READ THIS MANUAL:

WAIT FOR: means wait for the particular prompt shown here to appear on your screen or terminal.

ENTER: means type the words or commands shown here in **BOLDFACE**

OR

follow the directions given in lightface.

MENU SEQUENCE: means follow the steps shown. For example:

> MENU SEQUENCE: Initial Choice 1, Message Choice 4 means that at the Initial Choice menu, type 1. That will take you to the Message Choice menu, where you type 4.

<RETURN> used in this card means a carriage return on a line by itself. Always press Carriage Return (the RETURN or ENTER key) at the end of every line.

CTRL- denotes a control character. For example:
CTRL-C means hold the control key down and press the C key at the same time.

DIALING IN

TERMINAL SETTINGS (if your communications software requires them): 300 or 1200 baud (no extra charge for 1200 baud) 7 data bits, 1 stop bit, even (E) parity
Half duplex when dialing EIES direct;
Full duplex when dialing via GTE Telenet or Uninet.

USING PERSONAL COMPUTERS: check your communications software or modem manual for instructions on how to dial and connect to a computer phone number and connect to it.

USING ACOUSTIC COUPLER-BASED TERMINALS (like Miniterms): dial the appropriate phone number.
When you hear the high-pitched tone (signalling a connection) plug your telephone handset into the computer's "cup" connectors, making sure that the handset is correctly oriented.

There are three ways to dial into EIES from the continental United States.

1. DIRECT DIAL

Dial 201/596-2970 (1200baud) or 201/596-2960 (300baud). When connected:

WAIT FOR: Name or #?

2. DIALING THROUGH GTE TELENET

Dial your local GTE Telenet access number. When connected:

ENTER: **<RETURN> <RETURN>**

WAIT FOR: TERMINAL=

ENTER: **D1** if you have a personal computer
OR
<RETURN> if you have a terminal

WAIT FOR: 2

ENTER: **C 201 25**

WAIT FOR: Name or #?

3. DIALING THROUGH UNINET

Dial your local Uninet access number. When connected:

WAIT FOR: L?

ENTER: **<RETURN>.<RETURN>**

WAIT FOR: service:

ENTER: **EIES**

WAIT FOR: Name or #?

To find out a local access phone number, call these toll-free customer service numbers:

1-800-336-0437 (GTE TELENET)
1-800-821-5340 (UNINET)
1-201-596-EIES

LOGGING IN: What to do when you're at the Name or #? prompt

ENTER: Your EIES name, nickname, or number

WAIT FOR: Code?

ENTER: Your EIES access code

WAIT FOR: List Those Now On Line(Y/N)?

ENTER: **Y** if you wish to see who else is using EIES now
OR
N if you do not

Congratulations! You are now connected to EIES!

You will be told if you have messages waiting and invited to accept them. Then you will be taken to the EIES starting point:

INITIAL CHOICE?

MESSAGES

Messages are private electronic letters sent by one EIES member to one or more other EIES members. Only the author may edit or delete the message.

RECEIVING MESSAGES ++

Every time you sign on or off, EIES checks to see if you have waiting messages.

To receive messages anytime on EIES:

ENTER: **++**

This also takes you to INITIAL CHOICE?

RETRIEVING OLD MESSAGES +GET

Messages are stored on EIES for about three months.
To retrieve message number 12345:

ENTER: **+GET M12345**
OR
MENU SEQUENCE: Initial Choice 1, Message Choice 1, 12345
(the message number or L5 to print the last 5 messages.)
To +GET a message you must know its number.

COMPOSING MESSAGES +CM

ENTER: **+CM** (Compose Message)
OR
MENU SEQUENCE: Initial Choice 1, Message Choice 4

WAIT FOR: Entering Scratchpad for Message Composition:
1?

ENTER: Your message.
Enter a carriage return at the end of each line, or at least every 160 characters. Wait for the next line number prompt before resume typing.

WHEN DONE TYPING:

ENTER: **.** (by itself on a new line)

WAIT FOR: To (Name/#'s)?

ENTER: The EIES names, numbers, or nicknames of your message recipients, separated by commas.

WAIT FOR: Associated Message(#/CR=None)?

ENTER: the number of an earlier message to which this message will be linked.
OR
<RETURN> to skip

WAIT FOR: Keys (/Word/Phrase/CR=None)?

ENTER: Keywords or titles, separated by slashes.
OR
<RETURN> to skip

WAIT FOR: OK to Send?

ENTER: **Y** to send message.
OR
N to cancel message or send it anonymously.

WAIT FOR: Erase Scratchpad(Y/N)?

ENTER: **Y** (will erase the scratchpad, but not the message.)
N (will leave the message in the scratchpad)

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CONFERENCES

Conferences are shared electronic meeting spaces. Each conference member has a marker that keeps his/her place in the transcript.

FINDING CONFERENCES

?OPEN CONFERENCES
+DPC
+CMENU
+DMOD

PUBLIC conferences are open to anyone who signs in.

PRIVATE conferences have moderators who admit members and manage the flow of written conversation. To join a private conference you must message the moderator.

?OPEN CONFERENCES lists all public and private conferences open to new members, and indexes conference descriptions stored in public conference C1008.

+DPC lists all public conferences.

+CMENU lists all conferences to which you already belong.

+DMOD displays the moderator of any conference

ENTERING A CONFERENCE

+GC

ENTER: **+GC** (Get Conference) and a conference number
(Example; **+GC1000**)
OR
MENU SEQUENCE: Initial Choice? **2**
(Then give a conference number)

WAIT FOR: Member Status(Y/N/A/O)?

ENTER: **N** No (usually)

OR

Y Yes (lists all conference members)
O On (lists members online now)
A Active (lists members actively in this conference)

You will be invited to read any waiting comments.

Then you will arrive at: CONFERENCE CHOICE?

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COMPOSING NEW COMMENTS +CC

ENTER: **+CC** (Compose Comment)

OR

MENU SEQUENCE: Initial Choice **2**, Conference Number, Conference Choice **4**

WAIT FOR: Entering Scratchpad for C1000 Composition: 2?

ENTER: Your text.
Enter a carriage return at the end of each line, or at least every 160 characters. Wait for the next line number prompt before you resume typing.

WHEN DONE TYPING:

ENTER: **+** (on a new line by itself)

WAIT FOR: Associated Comment(#/CR=None)?

ENTER: the number of an earlier comment (in this conference) to which this comment will be linked.
OR
<RETURN> to skip

WAIT FOR: Keys (Word/Phrase/CR=None)?

ENTER: Keywords or titles, separated by slashes.
OR
<RETURN> to skip

WAIT FOR: OK to Send?

ENTER: **Y** to enter comment.
OR
N to cancel comment or send it anonymously.

RETRIEVING OLD COMMENTS +GET

Comments are stored on EIES permanently (until someone deletes them). The moderator pays a small storage charge for conferences above 100 comments.

ENTER: **+GET C1000CC1234** to retrieve comment number 1234 in Conference 1000

OR

MENU SEQUENCE: Conference Choice? **1**, comment number

To +GET a comment you must know its number. See ARCHIVES

for techniques for finding these numbers.

FINDING YOUR WAY AROUND EIES

GETTING AROUND

++
+
-

++ -- returns you to Initial Choice? from anywhere

+ -- takes you forward one step.

- -- takes you out of any EIES situation, usually to the nearest Menu Choice?

QUITTING

--
+FINISH
+BYE

Do not exit EIES by disconnecting your phone or computer. EIES may consider you connected until it checks your account's activity

-- which could take as long as 20 minutes
-- and may bill you for that time.

ENTER: -- OR **+FINISH** (to check for waiting messages first)
OR
+QUIT (to log off immediately)

PAUSING THE FLOW

CTRL-S
CTRL-Q

CTRL-S will pause the flow of text coming across your screen any time.
CTRL-Q will restart it.

FIXING ERRORS

CTRL-H
(BACKSPACE)
CTRL-X

CTRL-H or **BACKSPACE** key -- moves you back one space. Type over your error to correct it.

CTRL-X -- cancels everything typed so far on this line.

BREAKING

CTRL-C

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<BREAK>

A break key or command interrupts streams of text without disconnecting you.

On GTE Telenet or Uninet, type **CTRL-C** for break. On direct-dial, Telenet or Uninet, use the **<BREAK>** key on your terminal or the **<BREAK>** command included in many communications software packages.

TROUBLESHOOTING AND PROBLEMS

DUPLEX PROBLEMS

?DUPLEX
?DOUBLE

Do the characters you type come out double or invisible?

Switch your duplex setting from HALF to FULL
or from FULL to HALF

ENTER: **?DUPLEX** or **?DOUBLE** for details.

FROZEN ONLINE

Has EIES locked up, so you get no response from your keyboard?

Try this sequence of troubleshooting:

1. ENTER: **CTRL-Q** in case something triggered a CTRL-S (pause) accidentally.

2. ENTER: **CTRL-X** to see if you are still connected. You should see XXX or <DEL> appear on the screen.

   If so, wait two minutes. EIES may be temporarily overloaded by peak traffic. Usually it will restart within two minutes.

3. ENTER: **@** to go back to Telenet.
   D to disconnect from EIES.

   Then try logging into EIES again (c 201 25 etc.)

4. (Sigh). Only then, hang up the phone and redial.

5. When you reconnect, if told your account is already active online, call EIES (201/596-EIES) so someone can disconnect you.

GETTING HELP

?
???
?WORD

? -- produces instant explanations of your choices at most EIES locations.

???;YOUR MESSAGE HERE
Sends an instant one-line message to any User Consultants available.

For example: ???; I CAN'T FIGURE OUT HOW TO SEND A MESSAGE!

Messaging HELP: Send a message to HELP (110). It will be answered by the next User Consultant who signs online.

?WORD -- provides an instant explanation of any "WORD".
Examples: ?+GET ?CONFERENCE

EDITING WITHIN THE SCRATCHPAD

Editing commands work only within the scratchpad.
Enter each command on a line by itself.
EIES uses a line editor.

FINDING YOUR PLACE

:-
::
:
=

:- -- prints the entire scratchpad as you typed it

:: -- prints the scratchpad as it will appear to the reader

: -- prints the current line

:40-45 -- prints lines 40-45

= -- moves you to the last scratchpad line and prints it

MAKING CHANGES

<
<<
*
/old/new/

=40 -- moves you to line 40 and prints it; then you type new text to replace the existing line 40 text

< -- inserts one line before current line

<< -- inserts multiple lines

> -- ends insert

* -- deletes current line

*40 -- deletes line 40

/old/new/ changes the word "old" to the word "new" on current line

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FORMATTING TEXT

Everyone's terminal is different. Formatting commands shape paragrphs so they fit legibly on a variety of terminals and printers. Without formatting commands, long messages and comments are often hard to read.

Formatting commands begin with a period -- like .TEXT. Put each "dot command" on its own line of the scratchpad.

MAKING PARAGRAPHS .TEXT

.TEXT -- formats all subsequent text into paragraphs. Indents the first line of each paragraph five spaces.

.TEXT SKIP -- same as .text, but skips a space between each paragraph

WHEN USING .TEXT: Signal each new paragraph by entering a space at the beginning of the paragraph's first line.

.NOTEXT -- cancels .TEXT (so you can type charts, tables, and other text which requires exact formatting).

SIMPLE INDENTS AND SPACING .CENT .LEFT .FILL .BLANK .SPACE

.CENT Your Text Here -- centers the line "Your Text Here"

.LEFT 4 -- sets left margin to four spaces. Everything following will be indented four spaces. Cancel with .LEFT 0

.FILL -- fills the line with blanks( ).

.BLANK 2 -- inserts two blank lines

.SPACE -- begins single, double, or triple-spacing (ENTER: ?.SPACE for details)

AUTOMATIC FORMATTING +INITSP

Every new EIES account is set up so .TEXT automatically appears on the first line of your scratchpad every time you enter it.

+INITSP (INITial ScratchPad) enters an automatic first line to the Scratchpad with the dot command you choose.

Example: **+INITSP .TEXT**

Henceforth, .TEXT would always appear on the first line of your scratchpad.

+NOINITSP (NO INITial ScratchPad) cancels +INITSP entirely.

CUSTOMIZING YOUR ACCOUNT

SETTING MARGINS

+RIGHT
+LEFT

80-character-wide screens work fine with EIES as is.

Use **+LEFT** to set a different left margin (required by some printers)

Use **+RIGHT** for a right margin
(**+RIGHT 40** will set EIES for a 40-column screen)

ELIMINATING MENUS

+SSM

+SSM -- (Set Short Mode) ends the automatic printing of menus (making EIES much faster). To see any menu, enter **<RETURN>** at the appropriate Choice? prompt.

+SLM -- (Set Long Mode) re-establishes automatic menus.

SETTING AUTOMATIC PAUSES

+SLP
+SPA

+SLP -- (Set Line Pause) establishes a pause every 24 lines. This slows down incoming text so you can read it before it disappears off the screen. You can set the pause for any number of lines.
Example: **+SLP 8**

+SNLP -- (Set No Line Pause) cancels +SLP.

+SPA -- (Set Page Advance) establishes an automatic pause at the beginning of every new conference or item.

DEFINING COMMANDS

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?ANSWER AHEAD
+DEFINE

?ANSWER AHEAD -- describes how to string together a series

of EIES commands on one line, separated by commas and semi-colons.

+DEFINE -- defines your own personal commands.
ENTER: **?+DEFINE** for details.

+SHOW displays +DEFINEd commands.
+REMOVE deletes them.

ADVANCED FEATURES
For more power and flexibility on EIES

DIRECTORIES

The EIES directory lists all EIES members -- name, nickname, and EIES number. Members can fill in their telephone numbers, addresses, and brief descriptions.

The directory also lists EIES groups, which are formally designated Working Groups on EIES with two-digit numbers.
Example: Group 10 is the User Consultants

SEEING A DIRECTORY ENTRY +GD

ENTER: **+GD1** (Go to Directory choice 1)
OR
MENU SEQUENCE: Initial Choice? **5**, Directory Choice? **1**

Then enter the name, nickname, or number of the member whose directory entry you wish to see.

UPDATING YOUR DIRECTORY +GD7

ENTER: **+GD7** (Go to Directory choice 7)
OR
MENU SEQUENCE: Initial Choice? **5**, Directory Choice? **7**

WAIT FOR: Modify Public Information?

ENTER: **Y**

WHILE UPDATING YOUR DIRECTORY:

Retype any changed field, or type <RETURN> to leave a field unchanged.

The ADDRESS and DESCRIPTION fields are mini-scratchpads. Use EDITING COMMANDS to change them, and type + to proceed to the next section.

When done:

WAIT FOR: Modify Private Information (Y/N)?

ENTER: **N** (usually)
Y to change your access code (password) or pen name

WAIT FOR: OK to Modify (Y/N)?

ENTER: **Y** to confirm changes

N to cancel changes

FINDING PEOPLE +WHO
+FNAME
+GADD

+WHO 110 -- Gives name, nickname, and number for user 110.

+WHO BETTE -- Gives name, nickname, and number for the user with the nickname "Bette"

+FNAME BET -- (Find NAME) Identifies all users whose names or nicknames start with the letters "BET" (+FNAME will work with any number of letters)

+GADD -- (Get ADDress) Displays any users' address.

To search the Directory for users by zipcode, sign-on date, or description keyword:

MENU SEQUENCE: Initial Choice? **5**, Directory Choice? **3**

INSTANT MESSAGES (CHATTING)

SENDING INSTANT "ONE-LINERS" +SEN
???

+SEN 1234;YOUR MESSAGE HERE

-- Sends an instant one-liner to 1234 (could be any EIES nickname or number). If they're not online now, they receive it when sign on. Notifies you when they receive it.

???1234;YOUR MESSAGE HERE

-- Sends and instant one-liner to 1234. Faster than +SEN. No confirmation.

Both +SEN and ??? can go to multiple addresses, separated by commas. Example: ???1234,1235; FRED, MEET WILMA; WILMA, THIS IS FRED.

CONTROLLING "ONE-LINERS" BETTER +ON
+ONLINE
+DND

+ON -- Tells who is online at the moment.

+ONLINE -- Expanded form of +ON

+DND -- (Do Not Disturb) blocks ???s and +SENs in the scratchpad until you type +NDND.

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COMPOSING ON A PERSONAL COMPUTER

You can compose text on most personal computer word processors and transmit ("upload") it into the EIES scratchpad.

THE BASIC STEPS:

1. Compose and save a file to disk.
2. Bring up your terminal program and log into EIES.
3. Go to the appropriate scratchpad.
4. Use your communications software's appropriate command (SEND, TRANSMIT, UPLOAD, READ, etc.) to send the file to the EIES scratchpad.
5. When done, ENTER: :: to make sure it arrived intact and ENTER: + to place the item on EIES.

Uploading saves time and connect charges, but can be difficult to figure out. If you need more help, type **?UPLOADING** for possiblesolutions.

CONTROLLING THE PROMPTS

?
+SSW 20

EIES prompts each new line with a ?. If possible, set your communications software to wait for a ? before sending a new line.

Some communications software packages can recognize the character CTRL-Q as prompts for each new line. These packages have a setting for uploading with CTRL-S/CTRL-Q, DC1/DC3, or STOP/START (they all mean the same thing.)

ENTER: **+SSW 20** (Set Switch 20) to permanently establish CTRL-S/CTRL-Q prompting for your account.

AVOIDING UPLOADING ACCIDENTS

+NOEXECUTE

+NOEXECUTE -- turns off the execution of all EIES commands. Otherwise, files with editing command characters (- < & : * $) at the beginning of lines will accidentally trigger the commands and ruin the upload.

+NOEXECUTE only works within the scratchpad.

When done, enter **+EXECUTE** to proceed.

CONTROLLING OVERLOAD

BROWSING +D

MENU SEQUENCE: Initial Choice? **1**, Message Choice? **2**

This command will display TITLES ONLY of messages or conference comments. Specify the range of items several ways:

A single item: **1234**

A range of items, moving forwards or backwards:
2000-1000

The most recent items: **LAST 5** or **LAST 1000**

In conferences, use Conference Choice? **2**.

SKIPPING CONFERENCE MATERIAL +SCM

+SCM -- (Set Conference Marker). Use this command at Conference Choice? to move your marker to any item in a conference.
Example: **+SCM 123**

To set your marker to items written on a particular date, or to the last item in the conference:

ENTER: **+SCM** with no number and answer the questions

You can use +SCM to make your marker current, then display titles only of past items.

AUTOMATIC ABSTRACTS .RETURN +READ

Long comments -- beyond 25 lines -- can be exhausting. Use these commands to set up your item so that only the people who want to read the full text will have to do so.

.RETURN -- Used on a line by itself in the scratchpad. Your abstract (material above .RETURN) will appear to everyone reading the item.

Material BELOW the .RETURN line will not appear to readers.

+READ -- Readers must type +READ and the item

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number to see the missing text.

Example: **+READ C1000CC1234**

FINDING OLD MATERIAL

Messages are stored three months; conference items forever.
To find an old item you must search for its number.
MENU SEQUENCE: Message Choice? **3** or Conference Choice? **3**
takes you to Search Choice?

Here you specify to search for items:
by author or message receiver (Search Choice? **1**)
by date written (Search Choice? **4**)
by association (Search Choice? **5**).
by keyword (Search Choice? **6**)

Then specify range of items to search
Example: 1000-2000 or .LLAST 150

OTHER FEATURES

EIES has thousands of other features. No one uses them all, but all of them get used.

Here are the most useful features not described on this card.

ENTER: the **?WORD** shown to learn about them.

?NOTEBOOK -- for group writing or storing long documents.

?+SCAN -- for reading new items in all conferences with one command.

?C?COPY -- for moving text from one item into another.

?PEN NAMES -- for sending messages or comments under pseudonyms

?STORAGE AREAS -- for holding your text when you temporarily need your scratchpad for something else

?MODIFY -- for changing messages or comments after they're sent.

?CRT -- hints for using eies with a CRT terminal.

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Education Resources Directory

The Educational Resources Directory (ERD) is a listing of current educational grants. The full database has two linked parts -- one listing the grant information and the second the data on the principal investigator. In the following we give examples of how to enter the ERD from the EIES, how to get online data on using the ERD , and how to search and use the ERD. Those items shown in **BOLD** type are user inputs and these can be caps or lower case. An entry in the ERD is referred to as a resource.

How to Enter the ERD Database

+GRANT

At any point in EIES where an input is expected, one can enter the ERD by giving the command "+grant" and you will be taken to the ERD. For example:

```
Initial Choice?+grant

Welcome to the ERD GRANT INFO database.
As of 10/ 8/85 ERD GRANT INFO contains 589 resources and 0
comments.

Command?
```

A Listing of Commands

Once in the ERD GRANT database one can get a listing of commands.

```
Command?<Return>
```

Choose a verb from the first column and a noun from the second column and make a command by combining the first letter of each. For example, use AC to add a comment.

Verbs	Nouns
A (Add)	A (Activity trace)
D (Display)	C (Comment)
E (Enter)	D (Database)
F (Find)	E (Evaluation)
G (Get)	F (Format)
M (Modify)	K (Keyword)
P (Print waiting)	L (Layout)
R (Remove)	M (Marker)
S (Sort)	O (Option)
T (Tabulate)	P (Pattern)
U (Update)	R (Resource)
X (Xmit)	S (Structure)
	T (Template)
	U (User)

Enter ++ to return to EIES.
Enter ? to get a list of operational commands.

An Example of Display Format DF

The brief list of the Format of the ERD GRANT database is given by entering the command **df**. These are the fields by which you can search for resources in the ERD.

Command?df

FORMAT FOR ERD GRANT INFO DATABASE:

GRANT NUMBER; TITLE; PI NUMBERS; FUNDING AGENCY; AGENCY NUMBER; STARTING DATE; ENDING DATE; DURATION; YEAR 1 FUNDING; YEAR 2 FUNDING; YEAR 3 FUNDING; TOTAL FUNDING; PROJECT KEYWORDS; ABSTRACT; RELATED PROJECTS; FIELD OF APPLICATION

In addition, one can search on the fields used to describe the project PIs. These are:

PI NUMBER; LAST NAME; MIDDLE INITIAL; FIRST NAME; INSTITUTION; DEPARTMENT; INSTITUTE TYPE; MAILING ADDRESS; CITY; STATE; ZIP CODE; TELEPHONE (AAA NNN-XXXX); TITLE OR RANK; ASSOCIATED GRANT NUMBERS

An Explanation of the ERD Format

Following is a full list and explanation of the fields in the ERD GRANT database:

PART NAME	DESCRIPTION
GRANT NUMBER	- Unique number assigned to each grant resource; provides link between PI and Grant data bases
TITLE	- Title of grant
PI NUMBERS	- Number of PI/PD resource associated with grant resource
FUNDING AGENCY	- Federal agency or foundation which awarded the funds
AGENCY NUMBER	- Number assigned to grant by funding agency
STARTING DATE	- Starting date of the project
ENDING DATE	- Ending date of the project
DURATION	- Period of the project
YEAR 1 FUNDING	- Amount awarded for each year of the grant duration for non-competing continuations, or funds obligated fot the duration in Year 1 (See Total Funding)
YEAR 2 FUNDING	- Funding for 2nd year of non-competing continuation
YEAR 3 FUNDING	- Funding for 3rd year of non-competing continuation
TOTAL FUNDING	- Total funds awarded for the project to date
PROJECT KEYWORDS	- Keywords assigned to each resource to allow data base users to search by subject
ABSTRACT	- Brief description of the grant
RELATED PROJECTS	
LAST NAME	- PI/PD last name
MIDDLE INITIAL	
FIRST NAME	
INSTITUTION	
DEPARTMENT	
INSTITUTE TYPE	- Four character code to describe the institution awarded the grant; for example 4- or 5- year, public or private doctoral-granting institution; community organization; association
MAILING ADDRESS	
CITY	
STATE	
ZIP CODE	
TELEPHONE (AAA NNN-XXXX)	
TITLE OR RANK	- Title or rank of the PI/PD
ASSOCIATED GRANT NUMBERS	

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How to Return to EIES ++

To return to EIES:

Command?++

Leaving the ERD GRANT INFO database.

An Example of Get Resource — GR

Once in the ERD GRANT data base one can print resources showing grant and PI information using the **GR** command. In this example we use the "Grant Number" Format Part to tell the system which resources to print and we tell the system to print Grant Numbers 5 through 6. Any field can be used to specify the resources to be printed. Since only one Format Part can be used to get a resource, this is not an efficient way to search for grants in the ERD.

```
Welcome to the ERD GRANT INFO database.
As of 10/ 8/85 ERD GRANT INFO contains 589 resources and 0
comments.

Command?gr
Get by Which Part?grant number
GRANT NUMBER (#,#...#)?5...6

 ERD GRANT NUMBER:  5

 TITLE:                A Developmental Project in Africana
                            Women's Studies

 ABSTRACT:

     Develops a model program in women's studies incorporating
     a geographical, international, racial and class base
     through an increased and broadened theoretical base.
     Graduate faculty from five colleges at the graduate level
     will be involved as well as faculty from 4 historically
     black institutions' undergraduate programs.

 FUNDING AGENCY:         FIPSE
 AGENCY GRANT NUMBER:    8302676
 DURATION:                9/ 1/83 -  8/31/85 (24 mos   )
 YEAR 1 FUNDING:             $60671
 YEAR 2 FUNDING:              63139
 YEAR 3 FUNDING:                  0
 TOTAL  FUNDING:             $123810

 KEYWORDS TO SEARCH BY:
     WOMEN'S STUDIES;
     BLACK COLLEGES;


 INSTITUTION:          Atlanta University
 PI/PD:                Eleanor Hoyit (PI #7)
 TITLE/RANK:           Director
 DEPARTMENT:           Africana Women's Center
 ADDRESS:
                       Atlanta GA, 30314
 TELEPHONE:            404 681-0251
```

The next resource would follow.

A Simple Search of the Database
Using Find Resource **FR**

To find a resource in ERD Database we use the Find Resource command. An example of a simple search is given below.

```
Command?fr

Your request will be processed over night while you are not on
line and the results sent to you as an EIES message.

Find by Which Part?last name
LAST NAME (label;label...label)?savin
```

To get help with a choice, answer with a "?".

```
Action (G,D,I,N,C,M,S,T,R,&,/,-)??

   G > GET RESOURCES  -  Allows you to print the contents of
       each resource in your list. Prints in the same output
       format as GR.
   D > DISPLAY RESOURCES  -  Allows  you  to  display the
       resources in the find list, just the same as DR.
   I > display  ID'S - Allows you to display only the PRIMARY
       ID part of each resource in the find list.
   N > to return to COMMAND (also use + or ').
   S > SORT RESOURCES  - Allows you to sort the find list by
       any parts you specify. Works the same as SR.
   & > (Boolean  "and") Allows you to limit your find list by
       requiring resources to  match an additional part
       specification; resources in the  new find list will
       match  the  first  AND  the  second  part
       specifications.
   / > (Boolean "or")  Allows you to expand  your  find
       list by adding resources  with new part specifications;
       resources in the new find list will match the first OR
       the second part specification.
   - > (Boolean "not")  Allows you to limit your find list by
       excluding resources which match a new part
       specification; resources in the find list will match
       first but NOT the second part specification.

Action (G,D,I,N,C,M,S,T,R,&,/,-)?g
Background search to be performed:

LAST NAME=SAVIN
G

OK TO PROCESS BACKGROUND (Y/N)?y
Background process started.
The results will be sent to you as an EIES message.
```

An example of the output that EIES would send as a message. Other information will also be printed.

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ERD GRANT NUMBER: 51

TITLE: A Resource Center for the Stimulation of Post-Secondary Education Innovation Via Computer Network

ABSTRACT:

Stimulates postsecondary education nationally through the creation of a data base of innovations supported by various government and private foundations (including FIPSE) through electronic conferencing to promote continual discussion and learning about the innovations.

FUNDING AGENCY: FIPSE
AGENCY GRANT NUMBER: 8302812
DURATION: 9/ 1/83 - 8/31/86 (36 months)
YEAR 1 FUNDING: $22463
YEAR 2 FUNDING: 143528
YEAR 3 FUNDING: 0
TOTAL FUNDING: $165991

KEYWORDS TO SEARCH BY:
ELECTRONIC CONFERENCING;
ONLINE SYSTEMS;
TELECONFERENCING;
DATA BASES;

INSTITUTION: New Jersey Institute of Technology
PI/PD: William Savin (PI #56)
TITLE/RANK:
DEPARTMENT: Physics
ADDRESS:
Newark NJ, 07102
TELEPHONE: 201 645-5294

Doing a Simple Search for
Two Last Names

```
Command?fr

Your request can be processed over night while you are not on
line and the results sent to you as an EIES message, if you
prefer.
Process Overnight (Y/N)?y
Find by Which Part?last name
LAST NAME (lable;lable...lable)?savin;balestri
Action (G,D,I,N,C,M,S,T,R,&,/,-)?g
Background search to be performed:

LAST NAME=SAVIN;BALESTRI
G

OK to Process Background (Y/N)?y
Background process started.
The results will be sent to you as an EIES message.
```

The results of the search will be the two PIs Savin and Balestri.

A Search with a Boolean AND &
and Display Resource D

Once in the ERD GRANT INFO database, we again use the command **FR** (Find Resource) to search for resources. In this search we will find all FIPSE grants in the state New Jersey (NJ). We will also choose to Display the resouces found. In the display mode we get a short report on each resource found.

```
Command?fr

     Your request will be processed over night while you are
not on line and the results sent to you as an EIES message.

Find by Which Part?funding agency
FUNDING AGENCY (lable;lable...lable)?fipse
Action (G,D,I,N,C,M,S,T,R,&,/,-)?&
And With Which Part?state
STATE (lable;lable...lable)?nj
Action (G,D,I,N,C,M,S,T,R,&,/,-)?d
Background search to be performed:

FUNDING AGENCY=FIPSE
&STATE=NJ
D

OK to Process Background (Y/N)?y
Background process started.
The results will be sent to you as an EIES message.
```


BEST COPY AVAILABLE

The following is the display list of resources meeting the search criteria of being a FIPSE grant & in the state of NJ.

```
M 5891  142 for William Savin (BILL,203)  10/22/85   2:11 AM
L:79
KEYS:/PATTERN SEARCH////ERD GRANT INFO DATA BASE/


Welcome to the ERD GRANT INFO database.
As of 10/22/85 ERD GRANT INFO contains 589 resources and 0
comments.

Command?FR
Process Overnight (Y/N)?N
Find by Which Part?+mypr;+use $p$
Find by Which Part?+use $p$
Find by Which Part?FUNDING AGENCY=FIPSE
FUNDING AGENCY (label;label...label)?FIPSE

140 resources in list.

Action (G,D,I,N,C,M,S,T,R,&,/,-)?&STATE=NJ
STATE (label;label...label)?NJ

7 resources in list.

Action (G,D,I,N,C,M,S,T,R,&,/,-)?D
```

The output we want is now listed. The above message is a trace of the search requested.

```
ERD GRANT INFO  50    9/20/84  12:24 PM  SOURCE: 990
MODIFIED:             2/25/85  10:29 AM

TITLE:  The Hispanic Leadership Training Project
FUNDING AGENCY:  FIPSE
TOTAL FUNDING:  134212


ERD GRANT INFO  51    9/20/84  12:29 PM  SOURCE: 990
MODIFIED:             2/22/85   3:02 PM

TITLE:  A Resource Center for the Stimulation of Post-
Secondary Education Innovation Via Computer Network
FUNDING AGENCY:  FIPSE
TOTAL FUNDING:  165991


ERD GRANT INFO  58    9/20/84   1:01 PM  SOURCE: 990
MODIFIED:             2/25/85   3:23 PM

TITLE:  Junior Year in Women's Studies at Douglass College -
Rutgers University
FUNDING AGENCY:  FIPSE
TOTAL FUNDING:  76192
```

ERD GRANT INFO 61 9/20/84 1:10 PM SOURCE: 990
MODIFIED: 2/25/85 4:27 PM

TITLE: Teaching Technical Writing: An Institute for College Teachers
FUNDING AGENCY: FIPSE
TOTAL FUNDING: 62618

ERD GRANT INFO 74 9/20/84 1:42 PM SOURCE: 990
MODIFIED: 2/27/85 12:56 PM

TITLE: Teaching Education and Global Interdependence
FUNDING AGENCY: FIPSE
TOTAL FUNDING: 167989

ERD GRANT INFO 120 1/11/85 2:04 AM SOURCE: 990

TITLE: Disadvantaged and Minority Undergraduate Legal Studies Skill Development Program
FUNDING AGENCY: FIPSE
TOTAL FUNDING: 69359

ERD GRANT INFO 132 1/11/85 2:23 AM SOURCE: 990

TITLE: Graduate Professional Education for Information Specialists in an Electronic Age
FUNDING AGENCY: FIPSE
TOTAL FUNDING: 88268

If additional information is wanted on any of the above projects use the Command **GR** (Get Resources) to print the contents of the desired resource.

A Search Using Project Keywords

Each resource in the ERD is described by one or more Project Keywords. Using the **FR** we show a search for all resources with the Project Keyword of **ETHICS.**

```
Welcome to the ERD GRANT INFO database.
As of 10/20/85 ERD GRANT INFO contains 589 resources and 0
comments.

Command?fr

     Your request will be processed over night while you are
not on line and the results sent to you as an EIES message.

Find by Which Part?project keywords
PROJECT KEYWORDS (key;key...key)?ethics

Action (G,D,I,N,C,M,S,T,R,&,/,-)?g
Background search to be performed:

PROJECT KEYWORDS=ETHICS
G

OK to Process Background (Y/N)?y
Background process started.
The results will be sent to you as an EIES message.
```

The results of the search for Project Keywords of ETHICS is next received as an EIES Message. The first part of the message shows the search done during the night, and the second part of the message contains the resources found.

```
M 5562  143 for William Savin (BILL,203)  10/21/85   2:12 AM
L:184
KEYS:/PATTERN SEARCH////ERD GRANT INFO DATA BASE/


Welcome to the ERD GRANT INFO database.
As of 10/21/85 ERD GRANT INFO contains 589 resources and 0
comments.

Command?FR
Process Overnight (Y/N)?N
Find by Which Part?+mypr;+use $p$
Find by Which Part?+use $p$
Find by Which Part?PROJECT KEYWORDS=ETHICS
PROJECT KEYWORDS (key;key...key)?ETHICS

3 resources in list.

Action (G,D,I,N,C,M,S,T,R,&,/,-)?G
NOTICE: Your Template currently specifies partial Resource
printout.
```

The resources are now printed.

ERD GRANT NUMBER: 200

TITLE: Faculty Development Seminar in the Teaching of Ethics

ABSTRACT:
To support faculty development activities that will prepare humanities faculty outside the philosophy department to teach an ethics course required of all students, "Ethics: The Great Traditions," based on works by Aristotle, Kant and Mill.

FUNDING AGENCY: NEH
AGENCY GRANT NUMBER: EK2005484
DURATION: 4/ 1/84 - 7/31/85 (1 YR.)
YEAR 1 FUNDING: $58729
YEAR 2 FUNDING: 0
YEAR 3 FUNDING: 0
TOTAL FUNDING: $58729

KEYWORDS TO SEARCH BY:
ETHICS;
PHILOSOPHY;
HUMANITIES;
FACULTY DEVELOPMENT;

INSTITUTION: University of Montana
PI/PD: James A. Flightner (PI #214)
TITLE/RANK: Mr.
DEPARTMENT:
ADDRESS:
College of Arts and Sciences
University of Montana

Missoula MT, 59812
TELEPHONE: 406 243-2632

ERD GRANT NUMBER: 200

TITLE: Faculty Development Seminar in the Teaching of Ethics

ABSTRACT:

This resource will be printed plus one more. Note that each resource is seperated by a dashed line.

Appendix 3

Minutes of the Meeting at the Council on Foundations
Washington, D.C.
January 11, 1984

Attendees: Richard R. Johnson (Exxon Education Foundation), Karen Menichelli (Benton Foundation), Ralph E. Lundgren (Lilly Endowment, Inc.), Nancy A. Dube (Digital Equipment Corporation), Martha G. Butt (Northwest Area Foundation), John H. Buchanan (Kettering Foundation), Mary Leonard (Council on Foundations), Diana Hayman (FIPSE), Julia Jacobsen (C.U.R.I./A.A.C.U.O.), William Savin (N.J.I.T.).

Richard Johnson opened the meeting by welcoming all in attendance. He noted that other foundations and corporations had expressed interest in the topic of the meeting, the creation and maintenance of a new data base of currently funded educational projects, but because of conflicts were unable to be present today. Therefore, minutes of today's meeting will be distributed to all interested parties. A list of those foundations invited to the meeting is enclosed.

Johnson informed the gathering that several foundations are now involved in planning an electronic network. These activities are progressing slowly and he views the problem as one whereby the foundations, given the means for communication, still need topics to actively involve them in the network. The use of electronic communications, Johnson said, will only be effective when those on the network see a need to communicate via the network and recognize this communication as a method for reducing, rather than increasing, their workload.

There are three basic functions foundations and companies perform when they communicate outside: 1. Broadcasting (one-way sending of information such as annual reports, press releases, guidelines for submitting proposals, reports on programs and projects), 2. Search (securing needed information for internal actions), 3. Conferring (consulting and discussing with other foundation personnel and outside experts).

Broadcasting

Foundations and corporations will find it interesting, in Johnson's view, if they can provide quick, error free electronic information on what they are doing. This will require that grants, once made, can easily be transmitted, via electronic means, to a data base informing the community at large of a foundation's activities. In addition, it will be desirable if these reports, once made, can be the basis of the a foundation's annual report. Perhaps, also, this report can be done on-line in this system. Johnson pointed out that the Exxon Education Foundation also finds it difficult, because of staff limitations, to produce news releases, and it will be interesting if the data, once provided to the system, can be the basis for generating news releases. Last, but not least in the broadcasting area, is the ability for a foundation to flag certain grants in the data base as being extremely important to their mission, or as being exceptions, and not the rule to the type of grants the foundation will be making.

Search

Johnson spoke of the normal searches that he does through the Foundation Center and ERIC and the problem he has gaining the information he needs from these sources. His view is that if a data base can be put together where foundations have input into the initial design, one will be able to get better information than is

now possible and eliminate a great deal of the information in which one is not interested.

Conferring

Conferencing can become a major activity in an electronic medium if the foundations using this system and the data base also have the ability to hold planning conferences. The faculty and administrators using the data base will make a natural group that will want to talk among themselves as will the foundations and corporations using the system. In addition, foundations and grantees will want to use the system to gain information on how projects are progressing and if further projects are possible in given areas.

Savin next presented a project description. The goal of the project being funded by FIPSE is to offer colleges and universities information on currently funded post secondary educational projects. This will be done via an electronic network using the Electronic Information Exchange System at the New Jersey Institute of Technology. The project will implement an interactive data base entitled, "The Educational Resources Directory" (ERD). The data for this data base will come from government agencies, private foundations, and corporations funding post secondary educational projects.

The projects in the data base will be those designed to produce change in current educational practices and methodologies. The users of the data base will have the ability to append comments to the data base entries and to also discuss problems or ideas with consultants who will be part of the electronic network. For those areas which are deemed important on-line electronic conferences will be established. These conferences will allow for users of the system, namely faculty and college administrators, foundation executives, and government funding agencies, to discuss topics and, in some cases, evaluate ideas for new directions in educational development.

First stage funding for the project described came from FIPSE in September, 1983. The project, as envisioned, will take three years. The present year is for project planning and presently FIPSE, several other government agencies, and Johnson from Exxon Educational Foundation are on-line and helping develop plans for the project. The purpose of this meeting is to establish relationships with other private foundations and to organize their involvement in the planning and participation of this project.

The next stage in this project is to submit a continuation proposal to FIPSE. We will then proceed with our planning activities which will culminate in the final design of the data base. This will be done with representatives from government agencies, private foundations, corporations, and college faculty and administrators.

Karen Menichelli of the Benton Foundation informed the meeting that a network of foundations was now being established using ITT's Dialcom system. She asked where the data base being created could be accessed via the Dialcom system. Savin informed the group that the Dialcom system allows a gateway to any other system on Telenet, and since EIES is on Telenet, a direct link could be established.

Diana Hayman of FIPSE then discussed FIPSE's reasons for funding this project and the present cooperation with other government agencies. Ms. Hayman pointed out that FIPSE defines post secondary education as any education which happens after high school. FIPSE presently surveys its grants and has found that over eighty percent of them live on after government funding ceases. The reason for this is that one of the prime points of proposal evaluation is that the grant should have significant impact on the environment in which it is placed. One of the problems FIPSE now has is that it no longer has the ability to publish and

disseminate information on the grants and the projects presently being funded. This is seen as a great weakness because of the innovative nature of the types of projects FIPSE funds, and FIPSE sees the present project as a method of providing electronic notification of the work it is supporting. With this project FIPSE sees the possibility of having the projects it funds reach wider audiences and have larger impacts. Presently, those government agencies cooperating in this project are the National Science Foundation, the National Endowment for the Humanities, and ERIC.

The next phase of the meeting was opened by asking all participants, even though the meeting had been very informal to this point and many questions had been asked, to give their impressions of the project. We also asked if they would be interested in participating in future activities in this project. The general consensus was that the foundations present and those that they knew of would be interested in this project and several other avenues should be addressed to broaden the scope of project participation. First it was pointed out that many potential users of the system could be introduced to the project by using the offices at 1 Dupont Circle. Jacobsen, President of C.U.R.I. and Vice President of the Association for Affiliated College and University Offices, indicated that the later organization and she had the necessary contacts at 1 Dupont Circle and with the professional societies. She pointed out that much of the activity at 1 Dupont is lobbying and this was not the project's mission. The names suggested that we should contact are L. Albert and M. Kressel. It was also suggested by Ralph Lundgren that the Lilly Endowment's sponsored Liberal Arts Workshop each summer would be an appropriate forum to recruit colleges into test phases of the project.

It was pointed out that the project was to have a national character and therefore it might be appropriate to hold other meetings for foundations across the country, the next one possibly being on the west coast. Suggestions were made as to which foundations should be invited and who could help organize that meeting. Another suggestion was that secondary education should be involved in the planning stage of the project and that it might be important to see about including these types of projects in the data base. All of these comments were discussed thoroughly and the future plans of the project will be modified to include these suggestions.

The last topic discussed was the length of time data will be kept in the ERD. Bill Savin said he thought that five years might be a good lifetime to keep it in this interactive data base and at the end of that period it could be moved to a more archival type of data base. The view of the assembled foundation executives was that this might be appropriate for a good many projects but many others should have a much longer lifetime in the data base and that this five year period should be questioned. It was agreed that the five year limitation would not be implemented without further discussion and the possibility of identifying those projects which should have longer lifetimes in the data base will be studied.

The meeting closed with Johnson agreeing to help organize a west coast foundation meeting. Those attending today's meeting will be kept informed of future developments in the project, and Bill Savin will inquire as to the feasibility of including all or some of the attendees in the electronic network to help in the development of future plans.